

# VU Research Portal

## Changes in the occupational structure and occupational practice. A challenge to education.

de Bruijn, E.; Volman, M.L.L.

### ***published in***

European Journal of Women's Studies  
2000

### ***DOI (link to publisher)***

[10.1177/135050680000700414](https://doi.org/10.1177/135050680000700414)

### ***document version***

Publisher's PDF, also known as Version of record

[Link to publication in VU Research Portal](#)

### ***citation for published version (APA)***

de Bruijn, E., & Volman, M. L. L. (2000). Changes in the occupational structure and occupational practice. A challenge to education. *European Journal of Women's Studies*, 7(4), 455-474.  
<https://doi.org/10.1177/135050680000700414>

### **General rights**

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal ?

### **Take down policy**

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

### **E-mail address:**

[vuresearchportal.ub@vu.nl](mailto:vuresearchportal.ub@vu.nl)

# European Journal of Women's Studies

<http://ejw.sagepub.com/>

---

## **Changes in Occupational Structure and Occupational Practice : A Challenge to Education**

Elly de Bruijn and Monique Volman  
*European Journal of Women's Studies* 2000 7: 455  
DOI: 10.1177/135050680000700414

The online version of this article can be found at:  
<http://ejw.sagepub.com/content/7/4/455>

---

Published by:



<http://www.sagepublications.com>

On behalf of:

WISE (The European Women's Studies Association)

**Additional services and information for *European Journal of Women's Studies* can be found at:**

**Email Alerts:** <http://ejw.sagepub.com/cgi/alerts>

**Subscriptions:** <http://ejw.sagepub.com/subscriptions>

**Reprints:** <http://www.sagepub.com/journalsReprints.nav>

**Permissions:** <http://www.sagepub.com/journalsPermissions.nav>

**Citations:** <http://ejw.sagepub.com/content/7/4/455.refs.html>

# Changes in Occupational Structure and Occupational Practice

## A Challenge to Education

Elly de Bruijn

UNIVERSITEIT VAN AMSTERDAM

Monique Volman

VRIJE UNIVERSITEIT AMSTERDAM

---

**ABSTRACT** In response to recent developments in the labour market, in occupational structure and in occupational practice, many aspects of vocational education and training are subjects of discussion and in transition. The tertiary sector is growing, some occupations are integrating while others are differentiating. New methods of production and organization require new types of employee competencies: problem-solving and social-communicative skills are becoming more and more important. The article focuses on the importance and the possibilities of shaping these developments from a gender perspective. First, the significance of changing qualification requirements is discussed for the technical sector, the service and care sector and the economic-administrative sector. Second, two innovations in vocational education and training are discussed: the recognition of prior learning and the development of flexible, modular educational pathways.

**KEY WORDS** gender ♦ occupations ♦ professionalization ♦ qualification requirements ♦ vocational education

## INTRODUCTION

Equal opportunities policies in vocational education in European countries have often concentrated on encouraging girls to participate in courses in which they are underrepresented, particularly technical courses, and improving their position in these courses (Wilson, 1991;

---

*The European Journal of Women's Studies* Copyright © SAGE Publications (London, Thousand Oaks and New Delhi), Vol. 7, 2000: 455–474 [1350-5068(200011)7:4;455–474;014638]

Volman et al., 1995; Henwood, 1996). In this article we corroborate the premise that critical processes of change are occurring on the labour market, in occupational structure and in occupational practice, which provide opportunities to explore new strategies for equal opportunities for women in vocational education and training. With regard to the labour market, the strong growth of the tertiary sector indicates that the general impression that 'a technical course provides opportunities' and that 'courses preparing for the service sector offer no prospects for work' needs at the very least to be examined in more detail. It is also a reason for reappraising the choice of many girls for this sector and for more attention from a gender perspective to be paid to the service sector. With regard to the occupational structure, processes of integration of and differentiation between professions are occurring which are relevant from a gender perspective. In the daily practice of a wide range of occupations, new methods of production and forms of organization demand a different type of employee competency: narrow, specialized knowledge and skills are being superseded in importance by skills such as problem-solving and the ability to work in a team (Nijhof and Streumer, 1998).

These developments have prompted discussion and change in vocational education and training. The relationship between job-oriented and 'general' elements in vocational training are under review (Howieson et al., 1997; Achtenhagen, 1998; Brown, 1998; Brown and Manning, 1998; Trant, 1999) and there is an increasing emphasis on learning in a job-related context (Raizen, 1994; Boud, 1998). In our view these changes provide an opportunity to improve the position of women and girls in vocational education and training and on the labour market. They offer new opportunities for discussion on the traditional boundaries between the technical, caring and administrative fields and to improve the status and identity of courses and occupations in which women have always been overrepresented. These possibilities have scarcely been discussed.

In this article we describe in somewhat more detail the changes in the occupational structure and occupational practice briefly mentioned earlier. We analyse the meaning of changing qualification requirements in three sectors: (1) the technical sector, (2) the service and care sector, (3) the economic-administrative and commercial sector. The rest of the article is devoted to two specific reforms in vocational education and training and the opportunities and risks presented by these reforms from a gender perspective. First we discuss the increasing importance of recognizing and crediting employees' and students' competencies obtained elsewhere and otherwise in terms of (formal) qualifications. Second, new pathways are reviewed that have been developed in vocational education and training under the influence of changing qualification requirements. First, however, we explain which methods we used to arrive at our description of developments and practices.

## METHODS

During the first half of the 1990s (1990–6) a project was carried out by members of the Organisation for Economic Co-Operation and Development (OECD), aimed at promoting common reflection among OECD member countries on policy developments and changing visions concerning the role and place of vocational and technical education and training. The effectiveness and responsiveness of vocational education in its relationships with the economy was a particular concern of the project, which was titled ‘The Changing Role of Vocational and Technical Education and Training’ (VOTEC for short). Each of the participating countries produced a country report and a number of sectoral studies, analysing the ways in which vocational and technical education is responding to changing requirements in the economy (e.g. Bertrand, 1994; OECD, 1994c; Pair, 1994). Other studies that have been executed were a cross-country study of training paths and youth participation in vocational education and training (Pair, 1998) and a study of new approaches to integrated learning in OECD countries (Gruschka, 1994). Also several seminars were organized focusing on themes and problems related to the project theme, e.g. the future of apprenticeship, alternance and dual educational systems (Bertrand et al., 1994; Lütz, 1994), and the assessment, certification and recognition of occupational skills and competence (Lawton, 1992). These meetings resulted in overarching/general reports and analyses, discussing the new role of VOTEC (OECD, 1994b, 1995a, 1995b).

Towards the end of the project, however, it was recognized that there were some serious lacunae in the aspects which were covered by the project activities. Among others it was considered desirable to pay special attention to the changing role of VOTEC from a gender perspective, as gender seemed to be an important factor in the developments on which the project focused. An expert meeting was organized in order to ‘repair’ the omission concerning gender issues. We, the authors, were asked, as external consultants to this project, to review the results obtained from the various VOTEC projects in order to establish their relevance, need for qualification and lacunae from a gender perspective. As little theory and research exist that explicitly focus on gender and vocational education, an analysis of the project materials was made, using literature on gender and the labour market and gender and education (Weiner, 1994; Gaskell, 1995) on the one hand, and literature on sociological theories about the development of occupations (Beck et al., 1980; Kutscha, 1992; Kraayvanger et al., 1998) on the other.

The resulting analysis (de Bruijn and Volman, 1994) was the input for an experts’ meeting, in which experts in gender and vocational education from different OECD countries discussed the relevance of the results of

the VOTEC activity from a gender perspective. After the meeting the report was revised, by highlighting aspects on which consensus was achieved and including supplementary contributions from the participants (Volman, 1994). As we felt that the conclusions of the project and the meeting deserved more attention and elaboration, we used the ideas developed in the project in several studies into vocational education afterwards (de Bruijn and Howieson, 1995; Moerkamp et al., in press). In this article both the original analysis made for the OECD, the revisions made after the experts' meeting and ideas developed in the course of subsequent research projects into changes in Dutch vocational education are incorporated. Thus, although we claim a broader relevance of our general analysis, many of the specific examples given in the article originate from Dutch vocational education.

#### DEVELOPMENTS IN OCCUPATIONAL STRUCTURE, OCCUPATIONAL PRACTICE AND VOCATIONAL EDUCATION AND TRAINING

At present, several economic, technological, organizational and social developments are occurring at a rapid speed which have important consequences for vocational education and training and are also of importance from a gender perspective. Changes are taking place at the level of the *occupational structure*. On the one hand, jobs and occupations are being integrated and on the other, new jobs and occupations are being differentiated. The former, integration, is very apparent in the technical sector. Innovations in the production process and product innovations mean that the work process in different jobs has become increasingly similar just like the subject knowledge and skills that are necessary for that work. In many practical technical jobs, for example in installation technology and mechanical engineering, owing to technological developments a knowledge and understanding is now required that previously only an electrician would be expected to have. The 'plumber' who installs a central heating boiler, which is nowadays electrically driven, can no longer get by with 'bending, fitting and soldering' (OECD, 1994c). Furthermore, other types of non-technical competencies, such as social-communicative, organizational and problem-solving skills are increasingly essential in nearly all technical occupations. These developments have also taken place in other sectors thereby increasing the similarities in occupational practice in different branches and sectors.

Differentiation – the division of occupations and jobs and the emergence of new occupations – is particularly apparent in the growing tertiary sector. The secretarial profession is an example; as well as the position of 'ordinary secretary', there is now a whole range of specialized

secretarial positions such as medical secretary, legal or European secretary (Volman and Moerkamp, 1996; Tjeldens and Baaijens, 1997). Automation and technologization have also resulted in new occupational groups in the tertiary sector, for example automation officer. The creation of the welfare state and increasing affluence have given rise to entirely new markets such as the tourist industry. Mainly women and girls have profited from the growth in employment which has resulted from the tendency towards 'tertiarization' of work in the western world (OECD, 1994a; van Doorne-Huiskes et al., 1997).

Differentiation and integration processes in the occupational structure are reflected in vocational education and training. Hence, new courses and differentiations have been developed in recent years, particularly in the economic-administrative and commercial sector, for example courses in logistics and aviation services. Integration in vocational education and training mainly takes the form of including the same module in several courses, the content of the module, for example electronics, being relevant to all those courses.

The changes in *occupational practice* mentioned earlier can be summarized briefly as a shift from 'dealing with issues and things' to 'dealing with people and information'. Another important development is that due to rapid successive changes in production methods, specialized knowledge and skills become outdated more quickly. A 'job for life' is a thing of the past for most employees. During the course of their working lives, people will increasingly have to fulfil different positions in different companies or organizations and even in different sectors.

The present tempo of change in production processes and organizational forms means that companies and organizations must actively invest in the mobility and training of their personnel. These dynamic developments make it both undesirable and impossible to correlate training and current qualification requirements exactly and directly in initial vocational training courses.<sup>1</sup> It appears to be increasingly difficult to formulate precisely the knowledge and skills necessary to fulfil a particular occupation in the long term. Education and training is, moreover, no longer limited to the period preceding or the earlier phases of a professional career; they are important for everyone at all levels throughout their entire working career. Vocational education must provide a solid foundation for that career and life-long training (OECD, 1994b; Commission of the European Communities, 1997). It can also make a valuable contribution to *education permanente* by providing further training that is client oriented, relevant and flexible (Nijhof, 1999; van Wieringen and Attwell, 1999).

Partly as a reaction to these changes in occupational practice and their effects on the role of vocational education, vocational education in many West European countries is undergoing a process of change (Raffe, 1992;

de Bruijn et al., 1993; Brown and Manning, 1998; Trant, 1999). The content, structure and methodology of many vocational training courses have been updated in recent years. Changes in course *content* involve a revision of the occupational profiles (i.e. qualification profiles) that courses lead to. The new knowledge and skills now required are gradually being given a place in the attainment targets of vocational training courses (Nijhof and Streumer, 1998).

A radical change in the *structure* of vocational education and training has been the organization of educational pathways. Courses must now prepare students for qualifications that can be subdivided into partial qualifications. This is a first step towards phasing out rigid specialized courses leading to a specific qualification which will be replaced by flexible, modular training routes leading to a variety of qualifications and module certificates (Raffe, 1994; de Bruijn and Howieson, 1995; Brown and Manning, 1998; Nijhof, 1999). Initial training courses must ultimately offer educational pathways that are sufficiently specialized to be relevant to occupational practice in the chosen field yet not so narrow that they are only applicable to a limited range of jobs or occupational group. Given the increasing demand for further training and retraining (for the unemployed and re-entrants as well as those in employment), initial courses can also be used as the basis for specialized, tailor-made educational pathways for adult participants.

Changes in *methodology* pertain principally to a greater emphasis on the practical component and learning in the context of problems encountered in occupational practice (Gruschka, 1994; Raizen, 1994; Brown, 1998; Brown and Manning, 1998; Moerkamp et al., in press).

## CHANGING QUALIFICATION REQUIREMENTS IN THREE SECTORS

Changes in qualification requirements obviously vary from sector to sector and from profession to profession, as does their significance from a gender perspective. We discuss now the opportunities and risks associated with changes in the occupational structure and occupational practice from a gender perspective in three different sectors: the technical sector, the service and care sector and the economic-administrative and commercial sector.

### *Technical Sector*

Occupations and occupational groups within the technical sector seek to gain recognition by emphasizing their instrumental knowledge and expertise as the core of occupational practice. A carpenter must 'be able to



hammer in a nail'.<sup>2</sup> Vocational education and training also play a role in this; courses for technical occupations often tend to concentrate on specific technical-instrumental skills. The increasing importance of 'dealing with people and information' pointed out in the previous section has therefore prompted many changes in the technical sector and in technical courses. Employers now emphasize the need for their employees not only to be competent at their trade but also to be able to think and act diagnostically, have a problem-solving approach, be socially skilled and so forth. Vocational courses must therefore pay more attention to professional attitudes, social and communicative skills and problem-solving abilities.

Recognition of the need for non-technical-instrumental knowledge and skills in the technical sector, including skills traditionally associated mainly with the service sector, provide an opportunity for overcoming the masculine image of this sector. The increasing importance of communicative and social skills in technical professions could make these professions more accessible to girls and women. Owing to the feminine connotation of these skills, employers should easily be able to recognize them in girls and women. From the girls' point of view, a greater emphasis on such skills could make technology more attractive.<sup>3</sup> Several studies on higher and senior secondary technical education have shown, for example, that girls find the narrow technical approach of many technical courses too limited (see Volman et al., 1995; Henwood, 1996; Watt, 1998). This effect can only be achieved, however, if the importance of these skills is mentioned explicitly in the qualification requirements and occupational profiles and if students and employees are assessed on these skills. At the moment this is seldom the case. Course tests and examinations are still mainly aimed at technical-instrumental knowledge and skills. Change is only occurring slowly and hesitantly.

There are several reasons for this. In the first place, in technical occupations and technical courses, the specialized, often traditional instrumental knowledge is often regarded as the essence of 'craftsmanship'. This helps guarantee the occupation's right to exist and, in turn, that of the training course and also to exclude those who have not learned that trade. The process of change mentioned earlier indirectly challenges the masculine image of the occupation. Specialized, technical-instrumental skills that have long formed the basis of the definition of technical occupations do indeed have a masculine connotation (Cockburn, 1983; Wajcman, 1991).

In the second place, it has proved difficult to formulate the new competencies adequately from the point of view of both occupational practice and vocational training. Non-technical knowledge and skills must be integrated in the definition of occupational knowledge and skills. As yet this has not been achieved.<sup>4</sup> Competencies in the social-emotional field are

also considered to be difficult to define as they cannot be expressed in quantitative terms. The value attached to a particular skill is usually based on the average amount of time required to master that skill. Traditional quantitative and production-oriented standards are not suitable for the evaluation of service-related skills in which quality aspects are more important than quantity (OECD, 1994a). Others see this as the inability to recognize the competencies that are necessary for the work, often unpaid, that women perform (Willis and Kenway, 1996).

In our opinion, the endeavours to give non-technical-instrumental skills a place in technology must be exploited to the full from a gender perspective. Efforts are being made in several countries at the moment to define so-called 'key competencies' (Nijhof and Streumer, 1998). These are competencies that are essential to occupational practice but are not linked to one specific occupation or sector. Examples include collecting, analysing and organizing information; planning and organization; problem-solving; and working with others. Equal opportunities strategies could make good use of the increasing criticism of the tendency to define such skills in general terms and in a non-occupational context. These new competencies are not extra competencies but a redefinition of widely held competencies and a new definition of 'craftsmanship/craftswomanship'. A car mechanic does not need to be able to make general analyses. Yet when there is something wrong with a car, she or he must be able to use her or his professional expertise to make an adequate analysis of the problem, without taking too much time, which hopefully will result in a request to repair the car.

Competencies in the social-emotional field are often recognized but are defined in terms of personal qualities rather than in terms of knowledge and skills. This is precisely the problem that knowledge and skills traditionally attributed to women have always had to contend with (Cox and Leonard, 1991). These qualities are often described as 'being good with people', yet a more precise definition in terms of knowledge and skills should be possible, for example 'using one's ability to read body language and one's negotiation skills to identify potential conflict and resolve it before it becomes disruptive' (Willis and Kenway, 1996: 242).

Care must be taken that new, non-technical-instrumental skills are not defined and tested in such a way that they are more readily identifiable in men than in women. This is applicable to such skills as showing initiative, creativity and taking responsibility. The same type of behaviour is often judged and valued differently in women and men. Moreover, when changing qualification requirements are defined in terms of personal characteristics, the tendency in vocational education is not to include them explicitly in the curriculum, in the attainment targets and in examinations/assessments. This makes implicit, gender-specific and spurious selection criteria more likely after the course, when a school-leaver applies for a job.

It is therefore important from a gender perspective that qualification requirements do not include references to personal characteristics, feminine or masculine, as a matter of course. The idea that this is not a question of adding independent elements to occupation profiles and qualification profiles but of formulating non-technical-instrumental skills *in relation to* technical instrumental knowledge in our opinion provides a means of avoiding this pitfall.

### *Service and Care Sector*

While the *new* qualification requirements for technical occupations are either not formulated at all or formulated in terms of personal characteristics, many qualification requirements for the service and care sector have always been defined in terms of 'feminine' personal characteristics. Traditionally, very few qualification profiles in this sector have been defined, either in relation to the necessary technical-instrumental knowledge and skills or in relation to the non-technical-instrumental skills. The technical-instrumental skills are scarcely seen as skills because so many women possess them (they are seen as *every woman's skills* according to Willis and Kenway, 1996) and because women provide them 'free of charge' in the private sphere and as volunteers. It is often assumed that women inherently possess the non-technical-instrumental competencies. This is true, for example, of qualities in the social-emotional field such as tact, helpfulness and the ability to listen. These so-called 'tacit skills' are not included in occupational profiles and job descriptions, do not form part of the process of job evaluation and hence are not rewarded (Cox and Leonard, 1991). They are often dealt with in vocational education and training but not, however, as knowledge and skills. As competencies in the service and care sector are not formulated in detail, only a limited number of occupations and jobs are differentiated. This is quite the opposite to technical occupations where a detailed differentiation between activities, level and branch is made. The absence of a differentiation between jobs and levels within a profession means that a career path is also absent.

Equal opportunities strategies in the service and care sector should in the first place be aimed at improving the status of these occupations and at further differentiation within them. Explicitly stating, recognizing and rewarding the qualities needed to carry out these professions constitutes a first step towards this. Current practical developments in the caring professions could be used here. In the first place, the demand for care is growing rapidly due to the increasing number of old people and to the shift from intra-mural to extra-mural care. Changes have also occurred in medical and care technology as well as a shift from the approach that 'the institution decides' to 'the client decides'. Improvements in efficiency and

functionality and the need for controlling costs are contributing factors to this change in approach. This combination of factors and the resulting conflict between care and efficiency can lead to a certain level of professionalization within the caring professions in the sense that job requirements and responsibilities are described and defined or redefined more precisely, thereby making these requirements and responsibilities more apparent (Morée and Vulto, 1995).

As in the technical sector, a suitable strategy would be to formulate the non-technical-instrumental knowledge and skills as an explicit part of qualification profiles. This would have different implications than in the technical sector, however. The explicit formulation of non-technical-instrumental competencies in this sector could be used to differentiate between jobs and groups of jobs. Here too the competencies would be linked to the activities and responsibilities of the job in question. Adequate problem-solving skills vary within each branch of care (for example, intra-mural vs extra-mural care), for each client group (for example, psychiatric patients vs heart patients), and for each level (for example, care assistant vs senior nursing officer) in both content and meaning. Differentiation, not only by level or type of work but also by branch, client category and complexity of the patient/client situation, provides an opportunity to formulate the non-technical-instrumental knowledge and skills more specifically in relation to the technical-instrumental knowledge and skills. In this way the identity of the different groups of jobs that can be differentiated within the service and care sector will be more noticeable and thus a step will have been taken towards recognition, acknowledgement and professionalization.

Division of jobs, however, has been very limited up until now and has only occurred by level at the lower end of the scale (assistants) and at the upper end (management positions) with scarcely any change in the vast range of jobs in between. Training courses can perform an important role here by carefully differentiating between courses or by developing course modules for specific positions and by including all the required competencies in the attainment targets.

Another strategy for upgrading professions in the service and care sector within the framework of redefining qualification and training profiles is to emphasize the technical-instrumental qualification requirements. Recent developments provide an opportunity for this. Some occupations in the technical sector are undergoing a process of 'tertiarization'<sup>5</sup> whereas, within the service and care sector, there is evidence of a process of 'technologization'. Owing to the introduction of new technology, cost-cutting measures, new organizational concepts and new approaches to service and care, the qualification requirements of employees in this sector have changed considerably in favour of more technical-instrumental knowledge and skills. Examples of this include computer skills,

the organization and realization of teamwork as a care concept, and more emphasis on technical care skills. This facilitates the definition of occupations and positions and the formulation of qualification profiles. As already stated, differentiation between occupations and courses is of importance in the process of professionalization (in terms of status and identity) of service and care sector occupations.<sup>6</sup>

New technologies, organizational concepts and approaches to care are often accompanied by an increase in complex positions in the service and care sector, thereby enhancing the mobility and career prospects of employees. This also makes the sector more attractive to men. The so-called 'crown prince effect' (Ott, 1985) has already been identified in nursing. Men are quickly promoted to the higher positions often with no practical experience in the profession. This certainly does not constitute an argument against strategies aimed at differentiation and upgrading positions. It does demand additional strategies to ensure that women are also promoted to higher positions.

#### *Economic-Administrative and Commercial Sector*

Gender segregation by branch and particularly by position is characteristic of the economic-administrative and commercial sector. Women hold mainly supportive, representative and service-oriented positions (for example as receptionists and secretaries). Men are found mainly in higher positions, more specialized positions, such as bookkeepers, and in external positions such as marketing and sales. Qualification profiles, particularly for positions that are mostly held by women, are even less common and less specific than in the service and care sector. This is illustrated by the fact that employers consider candidates who have successfully completed general secondary education and those who have completed vocational training courses to be equally suitable for such positions (de Bruijn, 1994). Very often new employees, regardless of their previous education and training, follow an in-house company training course. The main objective of such courses is the internalization of the company's culture and of specific knowledge and skills required by the company or branch. When recruiting new staff, especially in a commercial branch, careful attention is paid to the right attitude, commitment and general personal development of candidates (as indicated by the level of education as opposed to the type of education).

Given the extremely competitive nature of this sector and the type of service positions (service-oriented and the necessity of fitting in with the company's image), employers have for a long time had virtually no involvement in regular vocational training in this field. (This is in sharp contrast to the technical and non-profit sector.) Employers preferred to have direct control of the training of their present and future employees

so that they could be virtually assured that employees on completion of the training would be productive and fit into the company culture.

There are a few clearly defined occupational groups in this sector, mainly in the financial and economic field, with detailed qualification profiles that are not specific to one company. The majority of occupations and positions, however, are categorized in a few globally formulated occupational groups. On the one hand, job descriptions and payment within these global groups vary considerably between branch sections and companies while the work is often the same. Little differentiation is made on the other hand, even within a company, between the levels of work. As well as the lack of initiative on the employers' part to formulate qualification requirements in explicitly non-company terms, this sector traditionally has a low level of organization of employees, particularly in occupations employing many women.

However, developments are also taking place in the economic-administrative sector which may have emancipatory effects. Job profiles for occupations in which many women are employed are now formulated in more detail, and opportunities for promotion are beginning to improve. For example, endeavours have been made in recent years to formulate a graduated series of job descriptions and occupational profiles for secretaries indicating the vocational education level and experience required (see Volman and Moerkamp, 1996; Tjzens and Baaijens, 1997). By clearly defining the duties and qualifications required for secretarial positions at different levels it was hoped to create the necessary conditions for career planning for secretaries and for reappraising the value of their profession.

As in the care sector, 'feminine' qualities play an important role in the occupational practice of secretarial positions. Yet these qualities are neither mentioned nor rewarded. In this respect job descriptions of secretaries are often incomplete. They do not include duties and requirements in relation to communicative skills such as tact and empathy. Responsibilities are described in vague terms such as 'looking after' and 'issuing instructions' instead of 'being responsible for' and 'managing'. In the context of professionalizing the secretarial profession, ways are being sought to reformulate 'helpfulness' in terms of 'service skills' (Volman and Moerkamp, 1996).

Vocational education could, in our opinion, give direction to such processes as well as respond to them. By developing clear course profiles they could present themselves as important actors in this process.

## RECOGNITION OF PRIOR LEARNING

The increasing overlap in qualification requirements between positions and occupations, the need for a different type of skills and competencies,

and continual changes in occupational practice demand new methods to determine what skills and abilities people actually have. This is increasingly necessary as it is impossible to retrain staff every time minor or major changes are made to the content of their job. Nor is it feasible to oblige students to start again from the beginning every time they transfer from one vocational training course to another (which often partially overlap). Changes in vocational education and training will be necessary as initial vocational education will become less prominent as a selection criterion in a time of changing job content and increasing job mobility.

Ways are being sought in both occupational practice and vocational education to recognize aptitudes and knowledge that have been acquired in all manner of ways – in a training course, in the workplace, in voluntary work or in the private sphere (Wolf, 1995, 1998). Experiments have been made in several countries with assessment centres where individuals can have their competencies tested (Raffe, 1992; Klarus and Nieskens, 1998). In France these centres are used in mainstream education to help place young people in the appropriate type and level of training (Froissart, 1992; de Bruijn et al., 1993). In Norway and France the individual right to get credit for prior, elsewhere or otherwise obtained competencies is regulated by law (Klarus and Nieskens, 1998).

The debate on the recognition of prior learning focused in vocational education and training in the first instance on students with a non-traditional educational career. How important the recognition of prior learning is first became apparent in relation to women returning to work and migrants. On the one hand, women re-entrants often have qualifications that are out of date yet on the other they have acquired relevant experience either doing voluntary work or in the private sphere during the period that they have not been active on the labour market. Migrants often have educational qualifications that are not recognized in the country in which they are living or experience for which they do not have a reference or diploma.

The fact that the recognition of prior learning is now relevant for 'ordinary' employees opens new opportunities for recognizing prior learning of girls and women. In the first place the explicit formulation of qualification requirements and of methods to assess ability are favourable developments. When there are no formal selection criteria or when criteria are not considered to be important, all kinds of unseen mechanisms come into play in which mostly personal characteristics are the deciding factors. This is frequently to the detriment of women owing to the composition of selection boards and the influence of feminine and masculine stereotypes. In the second place this process of explicitly formulating qualification requirements can also be made good use of in advancing the argument for including non-technical-instrumental skills in qualification profiles for all types of jobs.



From a gender perspective it is important that regular vocational education and training takes the lead in developing and implementing assessment procedures and does not leave this to the 'market'. The educational system is in a better position than the actors on the labour market to prevent sex stereotyping creeping into these procedures given that the various branches and occupational groups will try to protect their share of the market by emphasizing the importance of technical-instrumental skills. Another role for the educational system will become obvious in the near future. Given the planned flexibility of training routes (not only in initial training but also in retraining and further training) it will be increasingly necessary for vocational education colleges, lead bodies and/or social partners to ascertain the appropriate stage of the training route at which pupils or students should begin.

#### THE DEVELOPMENT OF NEW PATHWAYS IN VOCATIONAL EDUCATION

In several countries in Western Europe at the beginning of the 1980s it became clear to many of the parties involved that the alignment between vocational education and training and occupational practice was a problem (Raffe, 1992; Howieson et al., 1997; Trant, 1999). The transition from school to work was not easy for many young people, unemployment among youngsters was high while there was a shortage of well-qualified, skilled workers. It was concluded that vocational courses must be brought more into line with occupational practice. The new educational credo for vocational education and training became the 'flexibilization' of educational pathways, particularly of the structure and content.

An important characteristic of the structure and content of these new educational pathways was the aim of creating more 'open' learning pathways instead of rigid progressional pathways. Hence courses have been divided into individual, self-contained units or modules which are completed and examined in sections (unit certificates) instead of in one examination at the end of the course (Raffe, 1994; de Bruijn and Howieson, 1995; Nijhof, 1999). An advantage of such open educational routes is the possibility of including extra sections in a training course thereby making the choice of a particular course or job less definitive. It is then also possible to include less traditional elements in the qualification profile without radical decisions having to be made.

Analogous to the emphasis on the importance of competencies that are not restricted to a particular job or occupation, of broader skills profiles and of a certain blurring of demarcations between occupations, open educational pathways provide an opportunity to reduce gender segregation in vocational education. As well as facilitating untypical choices, open



educational pathways have the advantage that training can easily be picked up again or extended at a later stage. However, there is a risk attached to open educational pathways that is comparable to the problem of soft options in subject choices in general secondary education. When 'open' implies that it is possible to choose a vocational training route leading to a qualification profile that cannot be clearly related to occupational practice, gender-specific consequences may result. Experience has shown girls tend to give less consideration to the labour market when making educational choices than boys. From this point of view colleges for vocational education must guide students carefully in their choice of subjects as well as 'selling' the educational pathways on offer to students to employers (Raffe, 1992).

A second characteristic of the new educational pathways is the increased emphasis on learning in and in relation to a realistic or authentic occupational context (see, for example, Gordon et al., 1994; Raizen, 1994; Dehnbostel and Walter-Lezius, 1995; Brown and Manning, 1998; Nijhof and Streumer, 1998; Moerkamp et al., in press). In addition to the traditional work placement, other forms of contextual learning, problem-based learning and exposure to occupational practice are included, often utilizing new technologies. Simulation projects, case studies, solving on-the-job problems, and the involvement of experts from the field have been incorporated in the courses. The transition from education and training to working life and their associated cultures can therefore occur more gradually. This can be particularly advantageous to girls following training courses for traditionally male occupations.

## CONCLUSION: EQUAL OPPORTUNITIES STRATEGIES IN VOCATIONAL EDUCATION

To conclude this article we summarize what opportunities and dangers the developments discussed in this article present from the point of view of equal opportunities. The fact that non-technical-instrumental knowledge and skills are acquiring new importance in technical occupations may make the technical sector more accessible and attractive to women and girls. Problem-solving skills, showing initiative and organizational skills are also becoming increasingly important. We have stressed that these skills must not be formulated in terms of personal characteristics or qualities as this would facilitate gender prejudices. An equal opportunities strategy that should be developed for vocational education and training is aiming at the inclusion of non-technical-instrumental qualification requirements in qualification profiles. These requirements should be defined in terms of knowledge, skills and attitudes that can be *learned*.

Explicit recognition of the importance of social-communicative skills

can contribute to improving the status (including payment in the long term) of the traditionally female occupations in the care sector and in part of the economic and administrative sector. Recognition of the fact that this concerns knowledge, skills and 'attitudes' that can be learned and not innate qualities is a precondition for the professionalization of these occupations. In the context of the aim of professionalizing and upgrading these occupations reference can be made to the new technical-instrumental knowledge and skills that are required in occupational practice as a consequence, for example, of technological developments. Increasing differentiation and specialization of jobs in these sectors can result in better promotion prospects and career opportunities. A possibly unavoidable risk is that these sectors will then become more attractive to men who may quickly be promoted to the top positions.

Vocational training in these sectors should therefore take advantage of such developments from a gender perspective. First, the position of the female students on the labour market can be improved by preparing them for the new technologies and organizational forms they will encounter in their future working life. These must be given a place in vocational training courses. Second, the differentiation between job levels must be reflected in the training structure and it should be easy to transfer between training courses. With respect to vocational education we discussed the increasing importance of recognizing prior learning and competencies acquired elsewhere by employees and students. From a gender perspective, in our opinion, the flexibilization of training routes provides an opportunity to work towards less gender segregation in courses. However, flexibilization must not go so far that 'soft educational pathways' develop. Finally, the trend towards including varied forms of learning in realistic, job-related situations in training routes can be utilized from a gender perspective to prepare girls following training courses in which they are badly underrepresented to be able to cope in their future working situation.

An effective equal opportunities policy includes the careful monitoring of the relevance of policy developments in specific fields to equal opportunities. A number of current discussions, developments and opportunities in vocational education and training have been discussed in this article. We have not put forward detailed strategies. Strategies must be developed within the framework of policy development on vocational education and in the actual training courses. It is essential that equal opportunities expertise is involved at every phase of this process in which occupation profiles are formulated and reformulated, attainment targets are defined and students strive towards achieving these targets. After all, vocational training is only one of the actors in this field of influence; new training profiles and competencies can only be effective if they are recognized by the social partners and the government. However, clearly more can be done in the field of education than merely following developments

in the occupational sphere and equal opportunities strategies do not have to be restricted to motivating girls to participate in sectors in which they are underrepresented.

## NOTES

1. The term 'initial vocational training' is used to distinguish it from retraining and further training courses (post-initial training).
2. The introduction of new technology does not only change the character of technical-instrumental qualifications, but also their relevance to equal opportunities. As all kinds of lifting and hoisting work are now done by machinery, physical strength is no longer a requirement for many technical occupations and hence no longer a barrier (presumed or otherwise) to women doing such work.
3. Essentialism can easily creep into this argument as it makes use of existing gender prejudice. Perhaps unnecessarily, we emphasize that the qualities in question are not inherent traits of women and girls but qualities that have become linked with femininity in our culture.
4. Van Zolingen and van Onna (1994) point out that the specific inclusion of non-technical-instrumental competencies, or as they call them key competencies, can result in yet more lists of 'general' competencies that are more or less meaningless if not placed in a specific context (see also Mertens, 1974; Pratzner, 1978; Levy, 1987; Nijhof and Steumer, 1998).
5. That is to say, they start to show more and more of the characteristics of occupations in the service sector.
6. This is initially important though in the professionalization of every occupation (de Bruijn, 1994; de Bruijn and Nieuwenhuis, 1994). Technical occupations developed in the same way.

## REFERENCES

- Achtenhagen, F. (1998) 'General Versus Vocational Education – Demarcation and Integration', pp. 133–45 in W.J. Nijhof and J.N. Streumer (eds) *Key Qualifications in Work and Education*. Dordrecht, Boston, MA and London: Kluwer.
- Beck, U., M. Brater and H. Daheim (1980) *Sociologie der Arbeit und der Berufe*. Reinbeck bei Hamburg: Rowohlt.
- Bertrand, O. (1994) *The Changing Role of Vocational and Technical Education and Training. Synthesis of Country Reports*. Paris: OECD.
- Bertrand, O., M. Durand-Drouhin and C. Romani (1994) *Apprenticeship, Alternance, Dual System: Dead-Ends or Highways to the Future?*, general report of the fourth VOTEC seminar Marseilles 1994. Paris: OECD.
- Boud, E. (1998) *Current Issues and New Agendas in Workplace Learning*. Leabrook, Australia: NCVER.
- Brown, A. (1998) 'Designing Effective Learning Programs for the Development of a Broad Occupational Competence', pp. 165–87 in W.J. Nijhof and J.N. Streumer (eds) *Key Qualifications in Work and Education*. Dordrecht, Boston, MA and London: Kluwer.
- Brown, A. and S. Manning, eds (1998) *Qualifications for Employment and Higher Education. A Collaborative Investigation across Europe*, Leonardo da Vinci project. Hämeenlinna: University of Tampere.

- Cockburn, C. (1983) *Brothers: Male Dominance and Technological Change*. London: Pluto Press.
- Commission of the European Communities (1997) *European Year of Lifelong Learning*. Brussels: CEC.
- Cox, E. and H. Leonard (1991) *From Ummm . . . to Aha! Recognising Women's Skills*. Canberra: AGPS.
- De Bruijn, E. (1994) 'Tourism and Recreation', pp. 55–75 in *Vocational Training in the Netherlands: Reform and Innovation*. Paris: OECD.
- De Bruijn, E. and C. Howieson (1995) 'Modular Vocational Education and Training in Scotland and the Netherlands: Between Specificity and Coherence', *Comparative Education* 31(1): 83–100.
- De Bruijn, E. and L.F.M. Nieuwenhuis (1994) 'Education between Profession and Market: The Development of Professional Training', pp. 109–33 in W.J. Nijhof and J.N. Streumer (eds) *Flexibility in Training and Vocational Education*. Utrecht: Lemma.
- De Bruijn, E. and M. Volman (1994) *The Changing Role of Vocational and Technical Education: Challenges and Opportunities for Women. A Discussion of the Main Results of the VOTEC Activity*. Paris: OECD.
- De Bruijn, E., C. Froissart, C. González Tirados, C. Howieson, S. Manning, P. Ortega, D. Raffe and J. Spence (1993) *Current Issues in Modular Training: An Interview Study with Trainers in Six European Countries*. Edinburgh: Centre for Educational Sociology at the University of Edinburgh.
- Dehnbostel, P. and H.J. Walter-Lezius, eds (1995) *Didaktik moderner Berufsbildung. Standorte, Entwicklungen, Perspektive*. Berlin and Bonn: Bundesinstitut für Berufsbildung.
- Froissart, C. (1992) 'France', pp. 16–23 in D. Raffe (ed.) *Modularisation in Initial Vocational Training: Recent Developments in Six European Countries*. Edinburgh: Centre for Educational Sociology at the University of Edinburgh.
- Gaskell, J. (1995) 'Making it Work: Gender and Vocational Education', pp. 59–76 in J. Gaskell and J. Willinsky (eds) *Gender In/forms Curriculum: From Enrichment to Transformation*. New York: Teachers College Press.
- Gordon, J., J.P. Jallade and D. Parkes (1994) *Op weg naar een beroep in Nederland, Duitsland en Frankrijk. Structuren binnen het beroepsonderwijs en de afstemming van het onderwijs op de arbeidsmarkt: een internationale vergelijking* (Working towards an Occupation in the Netherlands, Germany and France. Structures within Vocational Education and the Alignment between Education and the Labour Market: An International Comparison). Leiden: Dienst Overheids Publicaties.
- Gruschka, A. (1994) *New Approaches to Integrated Learning – Synthesis Report*. Paris: OECD.
- Henwood, F. (1996) 'WISE Choices? Understanding Occupational Decision-Making in a Climate of Equal Opportunities in Science and Technology', *Gender and Education* 8(2): 199–214.
- Howieson, C., D. Raffe, K. Spours and M. Young (1997) 'Unifying Academic and Vocational Learning: The State of the Debate in England and Scotland', *Journal of Education and Work* 10(1).
- Klarus, R. and M. Nieskens (1998) *Competenties erkennen in Frankrijk, Noorwegen, Engeland en Duitsland* (Recognizing Competencies in France, Norway, England and Germany). 's-Hertogenbosch: Centrum voor INnovatie van Opleidingen.
- Kraayvanger, G., B. Hövels and F. Meijers, eds (1998) *De WEB; van regelgeving naar pedagogische praktijk* (The Adult Education and Vocational Education Act [WEB]: From Regulations into Pedagogics). Amsterdam: Max Goote Kenniscentrum Beroepsonderwijs en Volwasseneneducatie.

- Kutscha, G. (1992) '“Entberuflichung” und “Neue beruflichkeit” – Thesen und Aspekte zur Modernisierung der Berufsbildung und ihrer Theorie', *Zeitschrift für Berufs- und Wirtschaftspädagogik* 88: 535–84.
- Lawton, D. (1992) *Assessment, Certification and Recognition of Occupational Skills and Competencies*. Paris: OECD.
- Levy, M. (1987) *The Core Skills Project and Work Based Learning*. Bristol: Further Education Staff College.
- Lütz, B. (1994) *The Difficult Rediscovery of 'Professionalism'*. Paris: OECD.
- Mertens, D. (1974) 'Schlüsselqualifikationen. Thesen zur Schulung für eine moderne Gesellschaft', *Mitteilungen aus den Arbeitsmarkt und Berufsforschung* 7.
- Moerkamp, T., E. de Bruijn, I. van der Kuip, J. Onstenk and E. Voncken (in press) *Krachtige leeromgevingen in het MBO (Powerful Learning Environments in Senior Secondary Vocational Education)*. Amsterdam: SCO-Kohnstamm Instituut.
- Moreé, M. and M. Vulto (1995) 'Zorgarbeid als zorgenkind? De kwaliteit van arbeid in de gezinsverzorging' (Care Work as a Cause for Care? The Quality of Work in the Home Help Service), *Tijdschrift voor Arbeidsvraagstukken* 11(1): 48–60.
- Nijhof, W.J. (1999) 'Flexibility, Mobility and Transferability as Targets of Vocational Education – Cornerstones in COST Action 11', *Lifelong Learning in Europe* 2: 93–100.
- Nijhof, W.J. and J.N. Streumer, eds (1998) *Key Qualifications in Work and Education*. Dordrecht, Boston, MA and London: Kluwer.
- OECD (1994a) *Women and Structural Change. New Perspectives*. Paris: OECD.
- OECD (1994b) *Vocational Education and Training for Youth: Towards Coherent Policy and Practice*. Paris: OECD.
- OECD (1994c) *Vocational Training in the Netherlands: Reform and Innovation*. Paris: OECD.
- OECD (1995a) *Vocational Education and Training for the 21st Century – Opening Pathways and Strengthening Professionalism: Report from the Conference*. Paris: OECD.
- OECD (1995b) *Results of the VOTEC Activity and Proposals for Future Work*. Paris: OECD.
- Ott, M. (1985) *Assepoesters en kroonprinsen. Een onderzoek naar de minderheidspositie van agentes en verplegers (Cinderellas and Crown Princes. A Study on the Minority Position of Police Women and Nurses)*. Amsterdam: SUA.
- Pair, C. (1994) *The Changing Role of Vocational and Technical Education and Training: Context, Actors, Challenges*. Paris: OECD.
- Pair, C. (1998) *Pathways and Participation in Vocational and Technical Education and Training*. Paris: OECD.
- Pratzner, F.C. (1978) *Occupational Adaptability and Transferable Skills*. Columbus, OH: The National Center for Research in Vocational Education.
- Raffe, D., ed. (1992) *Modularisation in Initial Vocational Training: Recent Developments in Six European Countries*. Edinburgh: Centre for Educational Sociology at the University of Edinburgh.
- Raffe, D. (1994) 'The New Flexibility in Vocational Education', pp. 13–33 in W.J. Nijhof and J.N. Streumer (eds) *Flexibility in Training and Vocational Education*. Utrecht: Lemma.
- Raizen, S.A. (1994) 'Learning and Work: The Research Base', pp. 69–115 in *Vocational Education and Training for Youth: Towards Coherent Policy and Practice*. Paris: OECD.
- Tijdens, K. and C. Baaijens (1997) *Secretaries in the Netherlands 1980–1995: Country Report for the OECD Working Party on the Role of Women in the Economy*. The Hague: Ministerie van Sociale Zaken en Werkgelegenheid.

- Trant, A., ed. (1999) *Reconciling Liberal and Vocational Education*, Report of the European Union Leonardo da Vinci Research Project on Promoting the Attractiveness of Vocational Education (PAVE). Dublin: Curriculum Development Unit.
- Van Doorne-Huiskes, A., J. van Hoof, E. Roelofs and M. Kilkey (1997) 'Women and the European Labour Markets', *Journal of European Social Policy* 7(23): 163–78.
- Van Wieringen, F. and G. Attwell, eds (1999) *Vocational and Adult Education in Europe*. Dordrecht, Boston, MA and London: Kluwer.
- Van Zolingen, S.J. and B. van Onna (1994). 'Key Qualifications and Senior Secondary Vocational Education (MBO)', pp. 33–55 in W.J. Nijhof and J.N. Streumer (eds) *Flexibility in Training and Vocational Education*. Utrecht: Lemma.
- Volman, M. (1994) *Women in Vocational and Technical Education: Changes and Challenges. A Gender Perspective on the Results of the VOTEC-Activity*. Paris: OECD.
- Volman, M. and T. Moerkamp (1996) *Veranderingen in secretariële functies en opleidingen: een gender perspectief* (Changes in Secretarial Positions and Courses: A Gender Perspective). Amsterdam: SCO-Kohnstamm Instituut.
- Volman, M., E. van Eck and G. ten Dam (1995) 'Girls in Science and Technology: The Development of a Discourse', *Gender and Education* 7(3): 283–92.
- Wajcman, J. (1991) *Feminism Confronts Technology*. Cambridge: Polity Press.
- Watt, S.M. (1998) 'Redressing the Gender Imbalance in Science, Engineering and Technology within Higher Education', *Journal of Further and Higher Education* 22(1): 85–100.
- Weiner, G. (1994) *Feminisms in Education. An Introduction*. Milton Keynes: Open University Press.
- Willis, S. and J. Kenway (1996) 'Gender and the Restructuring of Work and Vocational Education in Australia: Some Perilous Possibilities', *Journal of Education Policy* 11(2): 239–58.
- Wilson, M., ed. (1991) *Girls and Young Women in Education. A European Perspective*. Oxford: Pergamon Press.
- Wolf, A. (1995) *Competence-Based Assessment*. Milton Keynes: Open University Press.
- Wolf, A. (1998) 'Competence Based Assessment. Does it Shift the Demarcation Lines?', pp. 207–21 in W.J. Nijhof and J.N. Streumer (eds) *Key Qualifications in Work and Education*. Dordrecht, Boston, MA London: Kluwer.

Elly de Bruijn is a researcher at the SCO-Kohnstamm Instituut and a university lecturer in educational theory at the Department of Educational Sciences of the Universiteit van Amsterdam. She publishes in the field of education and labour, in particular secondary vocational education. Address: SCO-Kohnstamm Instituut, P.O. Box 94208, 1090 GE Amsterdam, The Netherlands. [email: elly@educ.uva.nl]

Monique Volman is a lecturer at the Faculty of Psychology and Pedagogy of the Vrije Universiteit Amsterdam, and a researcher at the Graduate School of Teaching and Learning of the Universiteit van Amsterdam. She publishes in the field of education, gender and technology. Address: Vrije Universiteit, FPP, afdeling Onderwijspedagogiek, Van der Boerhorststraat 1 1081 BT Amsterdam, The Netherlands [email: mll.volman@psy.vu.nl]

